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EXAMINER

LEYBOURNE, JAMES J

ART UNIT

PAPER NUMBER

2881

DATE MAILED: 05/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/005,194

Applicant(s)

AVNERY, TZVI

Examiner

James J. Leybourne

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 April 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-13 and 31-53 is/are allowed.
- 6) ☒ Claim(s) 1-10 and 14-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. According to the Amendment A received 01 April 2003, claims 1, 9, 14, 22 and 30 have been amended; and claims 37-53 have been added.

112 Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 9, 14, 22 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1, 9, 14, 22 include the following phrase: "the nozzle and cavity being configured to direct the spray of fluid substantially parallel and proximate to the exit window". There is not support in the specification for the claim that the nozzle and cavity configuration directs the spray of fluid substantially parallel and proximate to the

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exit window. In the specification, it is the nozzle that directs the spray of fluid substantially parallel and proximate to the exit window. The cavity collects the fluid.

On page 2, lines 2-3, the specification states "The nozzle is configured to direct the spray of fluid substantially parallel and proximate to the exit window".

On pages 4-5, lines 26-1, the specification states "Typically, the nozzle 28 is configured to produce a spray 42 of fluid 64 into cavity 34 that is a relatively flat, thin, and horizontal film of fluid 64".

On page 6, lines 14-18, the specification states "The nozzle 28 is configured and positioned relative to cavity 34 and electron generator 12 to direct the spray 42 of fluid 64 substantially parallel and proximate to the exit window 36 of electron beam generator 12".

On page 5, lines 11-18, the specification states " The first portion 34a of cavity 34 has an upper area forming a reaction or sterilization region 30 through which the spray 42 of fluid is directed and a lower wall 33 which slopes downwardly into fluid outlet 32 located at a second portion or downstream end 34b of the cavity 34. The upper portion of cavity 34 is relatively horizontal or parallel to the exit window 36 of election beam generator 12 to allow the spray 42 of fluid 64 to pass through horizontally or parallel to exit window 36. The spray 42 of fluid 64 typically is within 1 inch of exit window 36 with about 1/4 inch being more preferable."

On page 7, lines 6-8, the specification states "The sterilized fluid is directed downwardly by the curved rear wall of cavity 34 and then flows downwardly from

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sterilization chamber 24 through the fluid outlet 32 for recovery or otherwise, as shown by arrow B."

The cavity only serves to direct the fluid after it has passed the exit window of the electron beam.

Claim Rejections - 35 USC § 102

4. Claims 1-10 and 14-29 are rejected for the reasons given in the first office action. Claim 30 is rejected because it is dependent on rejected base claim 28.
5. Claim 30 is rejected because it is dependent on rejected base claim 28.

Response to Arguments

Applicant's arguments with respect to claims 1, 9, 14 and 22 have been considered and are not persuasive.

In Amendment A, page 10, lines 15-16 the applicant asserts "the flow of water in Kondo is not directed into a cavity of a sterilization chamber and is at an angle relative to the scan horn 12a and the electron beam". In lines 19-23 the applicant asserts Kondo does not teach or suggest "a sterilization chamber having a cavity therein", or "directing a spray of the fluid into the cavity," or "the nozzle and cavity being configured to direct the spray of fluid substantially parallel and proximate to the exit window".

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As stated in the first office action, although Kondo does not teach a "chamber", it is inherent that an apparatus that uses high energy electron beam will be enclosed in a chamber for safety considerations. The flow of water in Kondo is directed into a "receiving means" as discussed in column 2, line 8 and shown in Fig. 2. The receiving means of Kondo is analogous to the cavity in that it collects the sterilized fluid.

As shown in Fig. 3, the nozzle of Kondo does direct the spray of fluid substantially parallel and proximate to the exit window.

Allowable Subject Matter

6. Claims 11-13, and 31-53 are allowed.

7. The following is an examiner's statement of reasons for allowance:

Regarding independent claim 11, the prior art fails to disclose or make obvious a fluid sterilization apparatus comprising:

- a container for containing a supply of fluid;
- a wheel system having circumferential surfaces, the wheel system being rotatably mounted within the container,
- a portion of the wheel system for extending above the supply of fluid with rotation of the wheel system drawing a film of fluid upwardly out of the supply of fluid on the circumferential surfaces;
- a doctoring member for controlling the thickness of the film of fluid on the circumferential surfaces of the wheel system;

- an electron beam generator for irradiating the film of fluid with a beam of electrons to sterilize the fluid; and
- a fluid removal member for removing sterilized fluid from the wheel system.

Claims 12–13 are allowed by virtue of their dependence on claim 11.

Regarding independent claim 31, the prior art fails to disclose a method of forming a fluid sterilization apparatus comprising providing the apparatus of claim 11.

Claims 32 and 33 are allowed by virtue of their dependence on claim 31.

Regarding independent claim 34, the prior art fails to disclose or make obvious a fluid a method of sterilizing fluid comprising:

- drawing a film of fluid upwardly out of a supply of fluid contained within a container on circumferential surfaces of a rotating wheel system rotatably mounted within the container, a portion of the wheel system extending above the supply of fluid;
- controlling the thickness of the film of fluid on the circumferential surfaces of the wheel system with a doctoring member;
- irradiating the film of fluid with a beam of electrons from an electron beam generator to sterilize the fluid; and
- removing the sterilized fluid from the wheel system with a fluid removal member.

Claims 35 and 36 are allowed by virtue of their dependence on claim 34.

Regarding independent claims 37, 43 and 48 the prior art fails to disclose or make obvious a fluid sterilization apparatus comprising:

- a sterilization chamber having a cavity therein;

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- a nozzle for receiving pressurized fluid and directing a spray of the fluid into the cavity;
- an electron beam generator having an exit window, the electron beam generator being mounted to the sterilization chamber for directing, a beam of electrons through the exit window into the cavity to the sterilization chamber to irradiate the spray of fluid, the nozzle being configured to direct the spray of fluid substantially parallel and proximate to the exit window and
- a pump for pumping the fluid.

Claims 38, 44 and 49 are allowed by virtue of their dependence on claims 37, 43 and 48 respectively.

Regarding independent claims 39, 42, 45 and 50, the prior art fails to disclose or make obvious a fluid sterilization apparatus comprising:

- a sterilization chamber having a cavity therein;
- a nozzle for receiving pressurized fluid and directing a spray of the fluid into the cavity,
- the nozzle directing a thin, flat film of fluid about .004 to .005 inches thick within the sterilization chamber; and an electron beam generator having an exit window, the electron beam generator being mounted to the sterilization chamber for directing a beam of electrons through the exit window into the cavity to the sterilization chamber to irradiate the spray of fluid,
- the nozzle being configured to direct the spray of fluid substantially parallel and proximate to the exit window.

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Regarding independent claims 40, 46 and 51 the prior art fails to disclose or make obvious a fluid sterilization apparatus comprising:

- providing a sterilization chamber having a cavity therein;
- forming a nozzle for receiving pressurized fluid and directing a spray of the fluid into the cavity, the nozzle capable of forming a thin, flat film of fluid;
- mounting an electron beam generator to the sterilization chamber, the electron beam generator having an exit window and for directing a beam of electrons through the exit window into the cavity of the sterilization chamber to irradiate the spray of fluid, the nozzle being configured to direct the spray of fluid substantially parallel and proximate to the exit window;
- forming the cavity of the sterilization chamber with an outlet through which fluid that is sterilized is removed; and
- forming a recycling passage in the cavity of the sterilization chamber for directing a portion of the spray of fluid back for further irradiation.

Claims 41,47 and 52 and 53 are allowed by virtue of their dependence on claims 42, 46 and 51 respectively.

8. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

10. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Leybourne whose telephone number is (703) 305-7067. The examiner can normally be reached on M-F 9:00 - 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R Lee can be reached on (703) 308-4119. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JJL

April 24, 2003



JOHN R. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600